L. Boitor

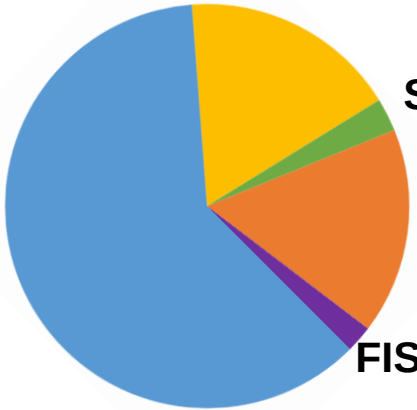
INTERNATIONAL PACIFIC HALIBUT COMMISSION

2020 FISS season: Design and implementation

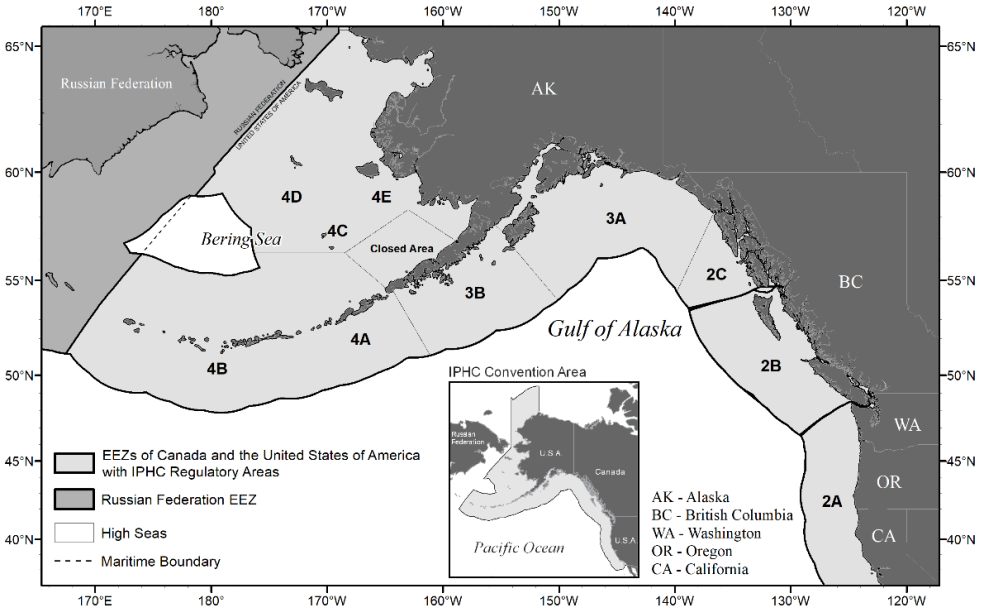
Agenda item 5.1

IPHC-2020-RAB021-06

Total Pacific Halibut Mortality - 2019



18,084 t
39.87 M lb



Total Pacific Halibut Mortality

Contracting Party	Fishery limits (net weight) Tonnes (t)	Fishery limits (net weight) Pounds (lb)	Mortality (net weight) Tonnes (t)	Mortality (net weight) Pounds (lb)	Percent %
Canada	**3,098**	**6,830,000**	**3,087**	**6,804,806**	**100**
United States of America	**14,415**	**31,780,000**	**14,267**	**31,453,705**	**99**
IPHC Regulatory Area 2A	748	1,654,000	692	1,526,495	93
IPHC Regulatory Area 2C	2,876	6,340,000	2,771	6,109,710	96
IPHC Regulatory Area 3A	6,123	13,500,000	6,254	13,787,578	102
IPHC Regulatory Area 3B	1,315	2,900,000	1,324	2,917,958	101
IPHC Regulatory Area 4A	880	1,940,000	790	1,741,619	90
IPHC Regulatory Area 4B	658	1,450,000	541	1,193,777	82
IPHC Regulatory Area 4CDE and Closed Area	1,814	4,000,000	1,895	4,177,140	104
Subtotal (TCEY)	**17,513**	**38,610,000**	**17,354**	**38,258,511**	**99**
Non-directed commercial discard mortality (U26)	none	none	730	1,610,000	n/a
Total	**none**	**none**	**18,084**	**39,868,511**	**n/a**

Pacific Halibut Mortality in Excess – USA

Contracting Party	Fishery limits (net weight)		Mortality (net weight)		Percent
	Tonnes (t)	Pounds (lb)	Tonnes (t)	Pounds (lb)	%
United States of America	**14,415**	**31,780,000**	**14,267**	**31,453,705**	**99**
IPHC Regulatory Area 3A	6,123	13,500,000	6,254	13,787,578	102
IPHC Regulatory Area 3B	1,315	2,900,000	1,324	2,917,958	101
IPHC Regulatory Area 4CDE and Closed Area	1,814	4,000,000	1,895	4,177,140	104

Pacific Halibut Mortality in Excess – Canada

Fishery	Mortality projection		2019 Mortality		
	tonnes	pounds	tonnes	pounds	Percent
Directed commercial discard mortality	59	130,000	64	140,000	**108**

Pacific Halibut Mortality in Excess – USA

Fishery	IPHC Regulatory Area	Mortality limit or projection		2019 Mortality		
		tonnes	pounds	tonnes	pounds	percent
Directed commercial	2A – Incidental Sablefish	32	70,000	36	79,360	**113**
	2A – discard mortality	9	20,000	13	29,000	**145**
	2C – discard mortality	27	60,000	36	80,000	**133**
	3A – discard mortality	141	310,000	160	353,000	**114**
	4A – discard mortality	41	90,000	47	104,000	**116**
	4B – discard mortality	9	20,000	17	38,000	**190**
	4CDE – discard mortality	18	40,000	34	75,000	**188**

Pacific Halibut Mortality in Excess – USA

Fishery	IPHC Regulatory Area	Mortality limit or projection		2019 Mortality		
		tonnes	pounds	tonnes	pounds	percent
Recreational	3A – guided 4A	857 5	1,890,000 10,000	916 6	2,019,000 14,000	**107** **140**
Subsistence	3B 4A 4B	5 5 0	10,000 10,000 0	8 6 <1	16,644 13,237 1,684	**166** **132** **n/a**

Pacific Halibut Mortality in Excess – USA

Fishery	IPHC Regulatory Area	Mortality limit or projection		2019 Mortality		
		tonnes	pounds	tonnes	pounds	Percent
Non-directed commercial O26 discard mortality	2C	14	30,000	41	91,000	**303**
	3A	581	1,280,000	623	1,373,000	**107**
	3B	163	360,000	189	416,000	**116**
	4A	82	180,000	91	200,000	**111**
	4CDE & Closed	848	1,870,000	1,090	2,404,000	**129**

Concerns with Mortality Estimates

Directed Commercial – U.S.A.

- **Discard mortality in Alaska**
  - **inaccurate mean fish weight**
  - **No observer coverage for vessels less than 40 feet**
  - **Hook and line observer coverage is low (12% to 15%) in GOA and Bering Sea**

Recreational – Canada and U.S.A

- **Self reporting of lodges in BC and AK**

Subsistence – Canada and U.S.A.

- **Roll over since 2007 (Canada) and 2018 (U.S.A)**

Non-directed commercial discard in other fisheries – U.S.A.

- **Hook and line observer coverage is low (12% to 15%) in GOA and Bering Sea**
- **Non-pelagic trawl catcher vessel observer coverage is low (13%) in GOA**
- **Challenges with tendered versus non-tendered deliveries**

2019 Port Highlights

Canada

- Adding collection of marine mammal details to logbook – agreement with USA logbooks

USA(AK)

- Dockside surveys in Homer, Sitka, Seward and Juneau to evaluate most common discard practices used recreationally. Survey results will be used to help design field experiment in the Spring of 2020 intended to provide estimates of discard mortality rates in the recreational fishery.

2019 Port Highlights

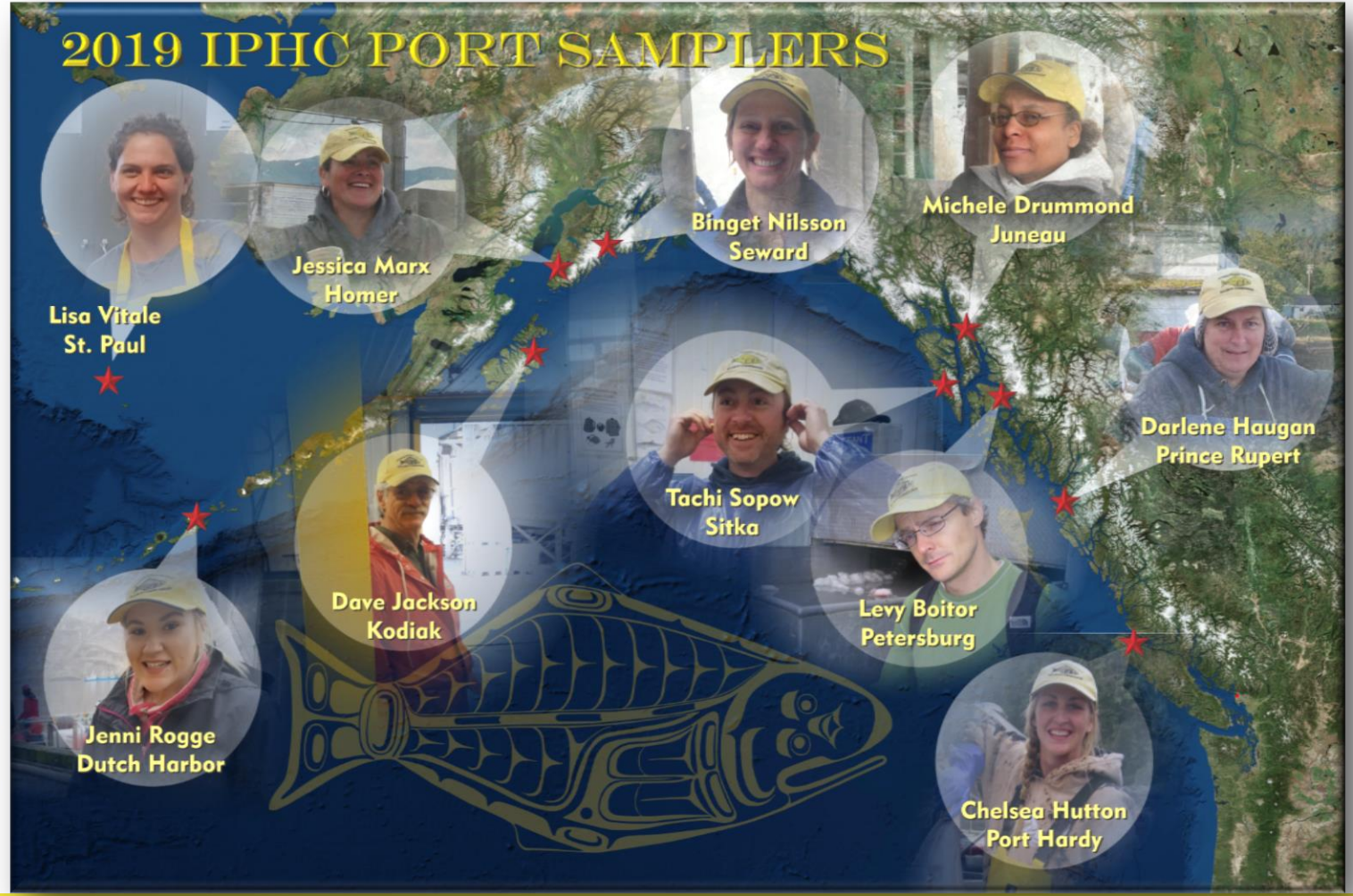
Head-on requirement

- Implemented in 2017
- Fresh landings with head off
  - none in USA (2017 to 2019)
  - Canada
    - **10 tonnes (22,597 lb or 0.4%) 2019**
    - **5 tonnes (11,821 lb or 0.2%) 2018**
    - **3 tonnes (6,186 lb or 0.1%) 2017**
- Frozen landings with head off
  - none in USA (2017 to 2019)
  - Canada
    - 37 tonnes (81,010 lb or 1%) 2019
    - 42 tonnes (92,148 lb or 2%) 2018
    - 36 tonnes (78,583 lb or 1%) 2017

2019 Updates

Use of pot gear

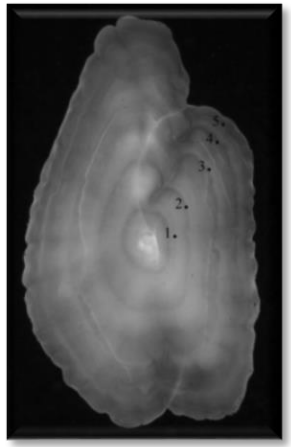
- Implemented in USA in 2017
- Landings with pot gear
  - Canada – n/a
  - USA (AK)
    - 29 tonnes (63,701 lb or 0.3%) 2019
    - 23 tonnes (49,983 lb or 0.3%) 2018
    - 12 tonnes (27,025 lb or 0.1%) 2017
- Logs with pot gear
  - Canada
    - None in 2019
    - None in 2018
    - <1 tonne (<100 lb or 0.1%) 2017
  - USA (AK)
    - 23 tonnes (50,994 lb or 0.3%) 2019
    - 22 tonnes (49,308 lb or 0.3%) 2018
    - 12 tonnes (26,813 lb or 0.1%) 2017
- Challenges for industry
  - USA
    - Adjusting to NOAA Fisheries logbook regulations
    - Extended to the Bering Sea


2019 IPHC PORT SAMPLERS
Lisa Vitale
St. Paul
Jessica Marx
Homer
Binget Nilsson
Seward
Michele Drummond
Juneau
Darlene Haugan
Prince Rupert
Tachi Sopow
Sitka
Dave Jackson
Kodiak
Levy Boitor
Petersburg
Jenni Rogge
Dutch Harbor
Chelsea Hutton
Port Hardy

Primary objective

Standardised, fishery-independent data collection for the Pacific halibut annual stock assessment

- Pacific halibut distribution and abundance trends – CPUE
- Collection of biological structures (determining sex and maturity and age)
- Data from U32 Pacific halibut



Coastwide weights at-sea

Photos by Jonathan Turnea

- Weights taken at-sea along with lengths on all vessels

Standardisation

Gear

- Fixed gear

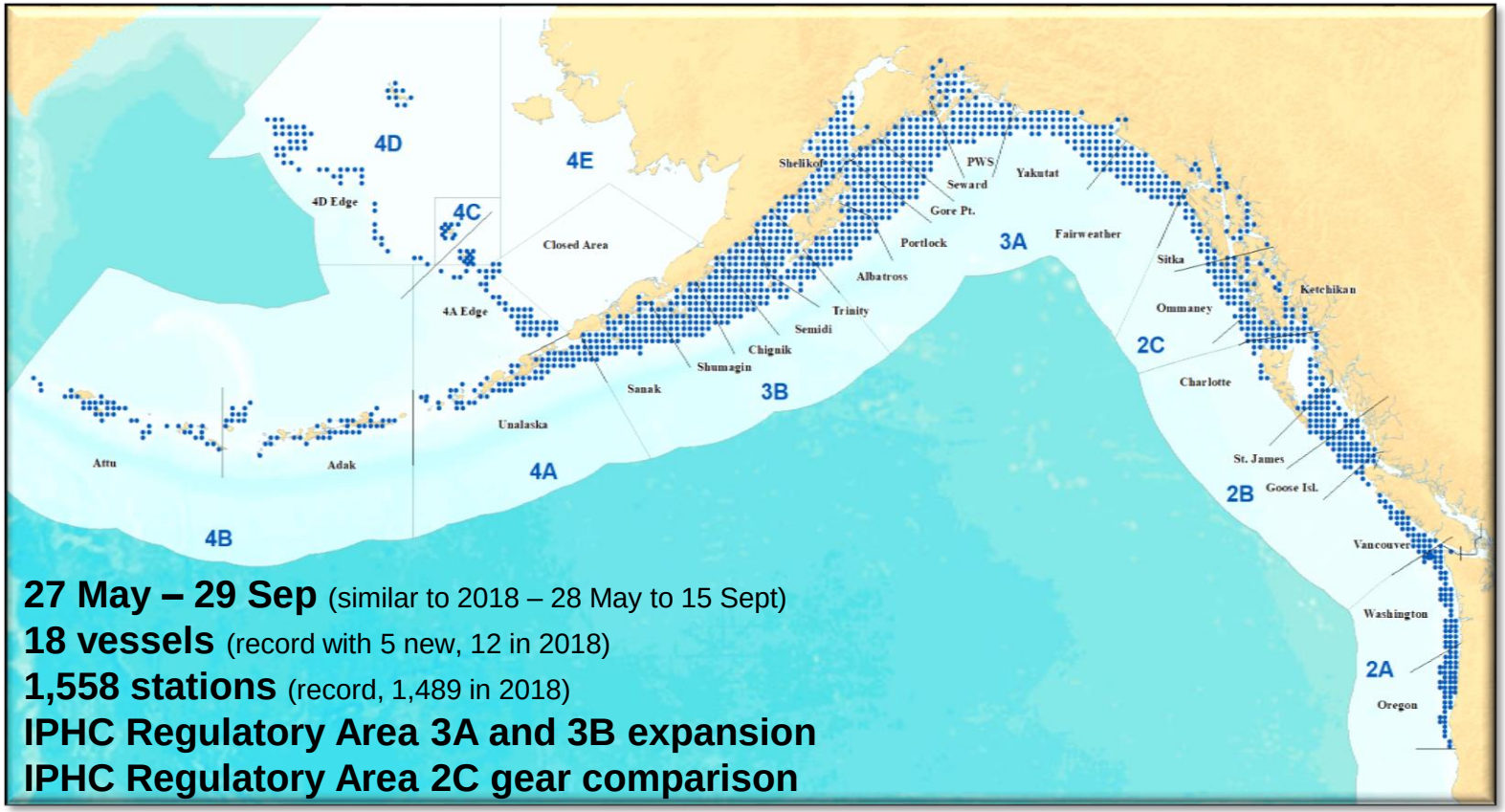
Each skate

- 548.64 metres (1800 feet) with 100 hooks spaced 5.49 metres (18 feet) apart
- No.3 (16/0) circle hooks threaded through the front on 61 to 122 centimetres (24 to 48 inch) gangions
- 3 to 5 kilogram (7-10 pound) weights on each non-anchored skate end

Bait

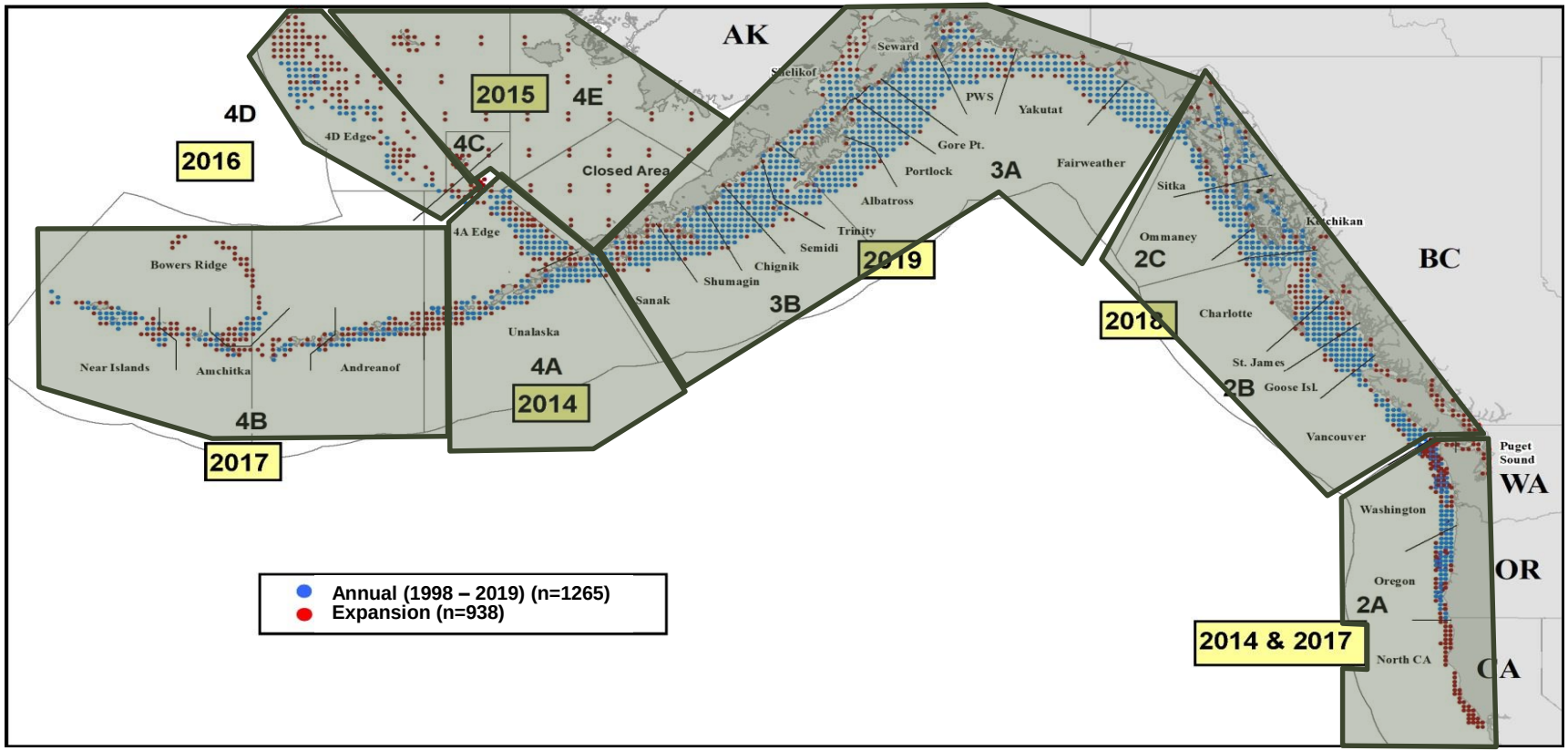
- Frozen chum salmon
- Number 2 semi-bright or better
- Cut 1/10 to 1/6 kilogram (1/4 to 1/3 pound)
- Captains sign off on bait quality

2019 Fishery-Independent Setline Survey (FISS)



27 May – 29 Sep (similar to 2018 – 28 May to 15 Sept)
18 vessels (record with 5 new, 12 in 2018)
1,558 stations (record, 1,489 in 2018)
IPHC Regulatory Area 3A and 3B expansion
IPHC Regulatory Area 2C gear comparison

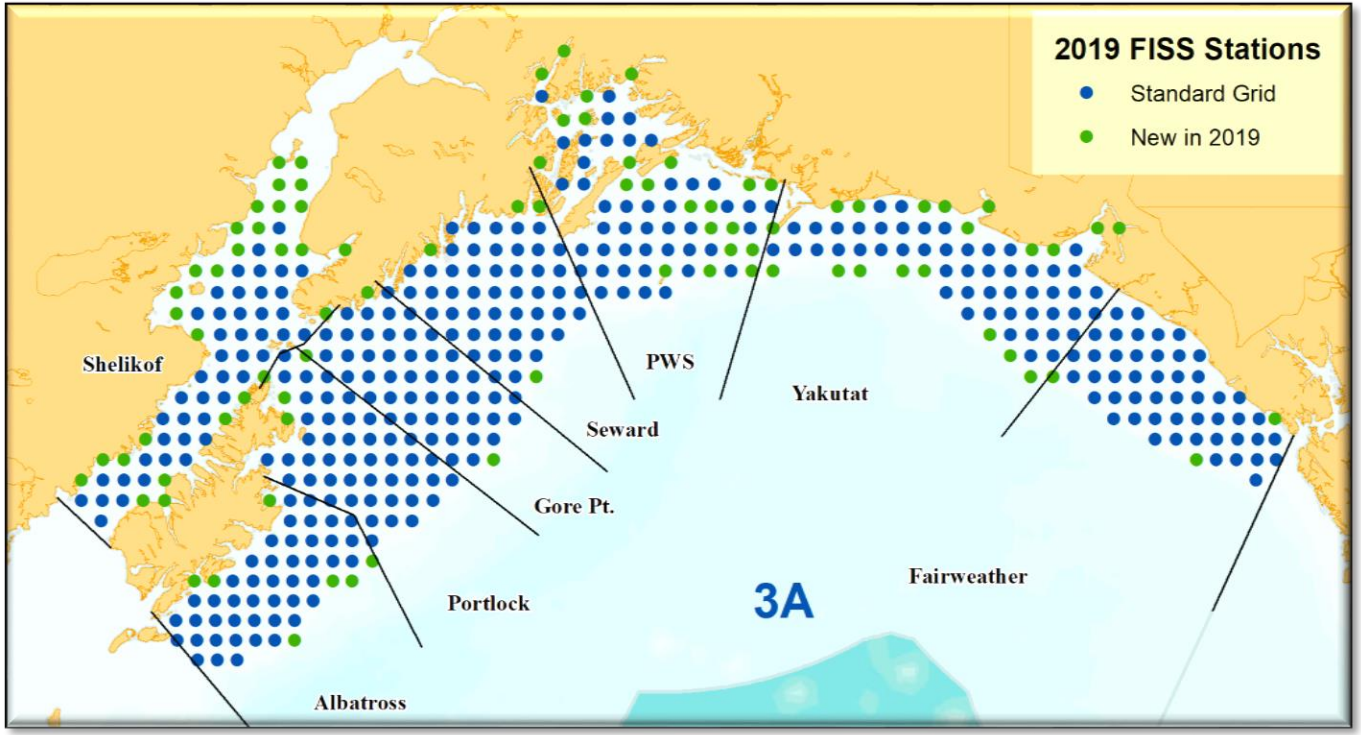
IPHC FISS stations 2014-19



FISS expansions in 2019

- **IPHC Regulatory Area 3A**
  - Addition of deep (>275 fm) and shallow (10-20 fm) stations
  - Other coverage gaps, including:
    - Cook inlet
    - Inside and outside Prince William Sound
- **IPHC Regulatory Area 3B**
  - Addition of deep (>275 fm) and shallow (10-20 fm) stations
  - Other coverage gaps, including:
    - Waters around the Shumagin and Sanak Islands

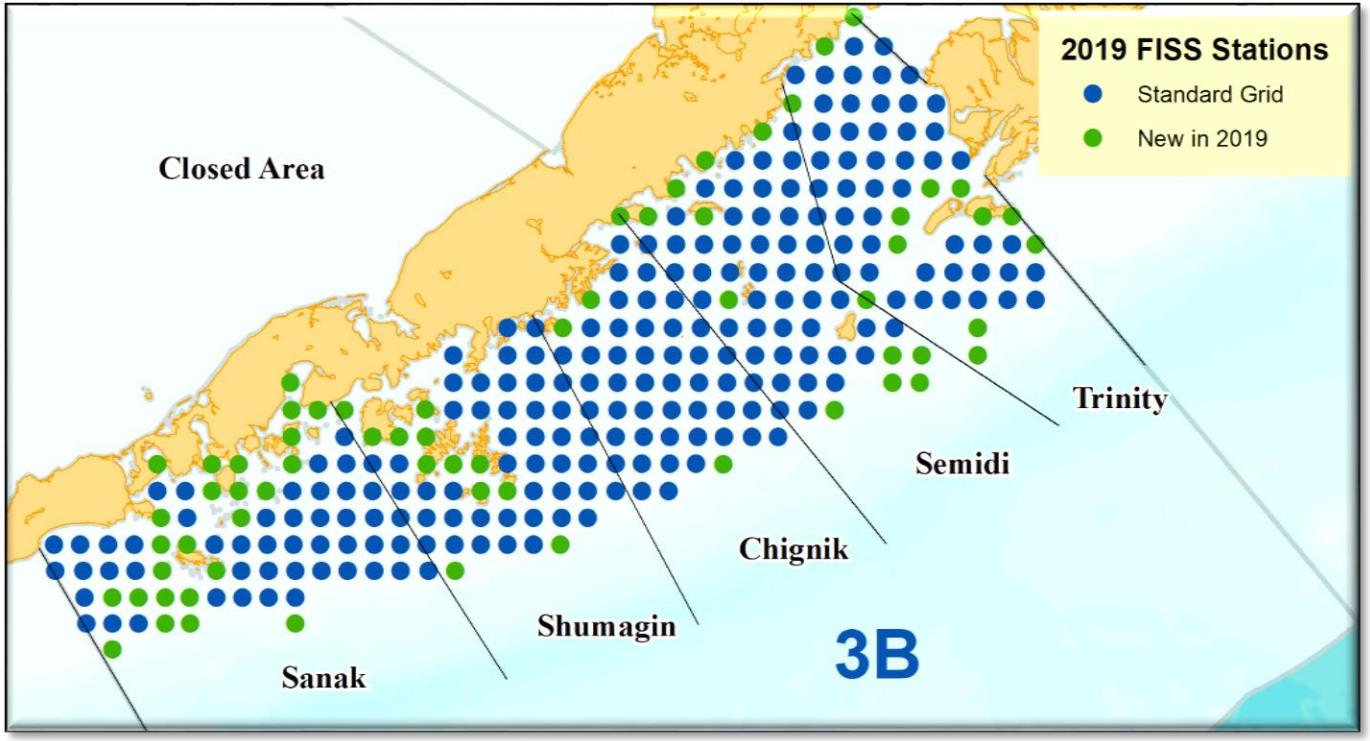
2019 FISS expansions



89 Expansion stations
463 Total

Fairweather – 51 (2 expansion)
Yakutat – 70 (19 expansion)
PWS – 68 (23 expansion)
Seward – 52 (4 expansion)
Gore Pt. – 48 (3 expansion)
Portlock– 50 (4 expansion)
Albatross – 52 (7 expansion)
Shelikof – 72 (27 expansion)

2019 FISS expansions

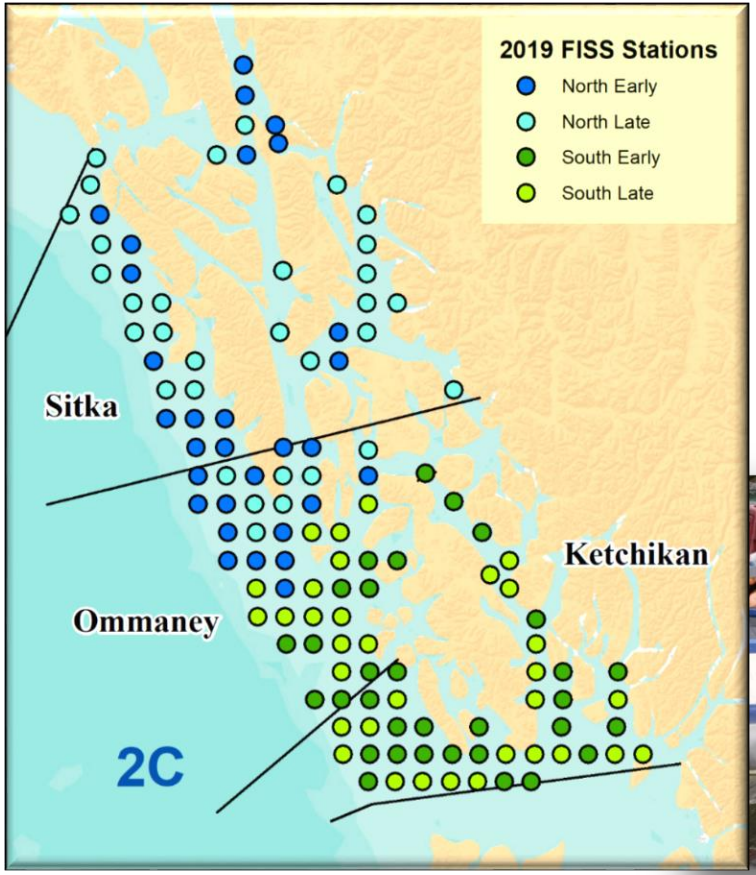


66 Expansion stations
297 total
Trinity – 58 (11 expansion)
Semidi – 60 (13 expansion)
Chignik – 49 (4 expansion)
Shumagin – 55 (11 expansion)
Sanak – 75 (27 expansion)

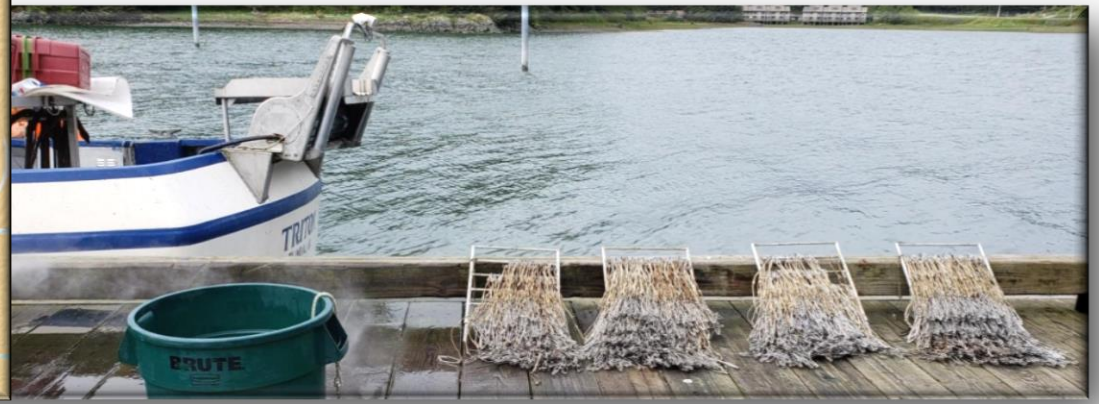
2019 gear comparison - fixed and snap

- IPHC Regulatory Area 2C
- Each station fished twice in random order
  - once with fixed-gear
  - once with snap-gear.

2019 FISS gear comparison



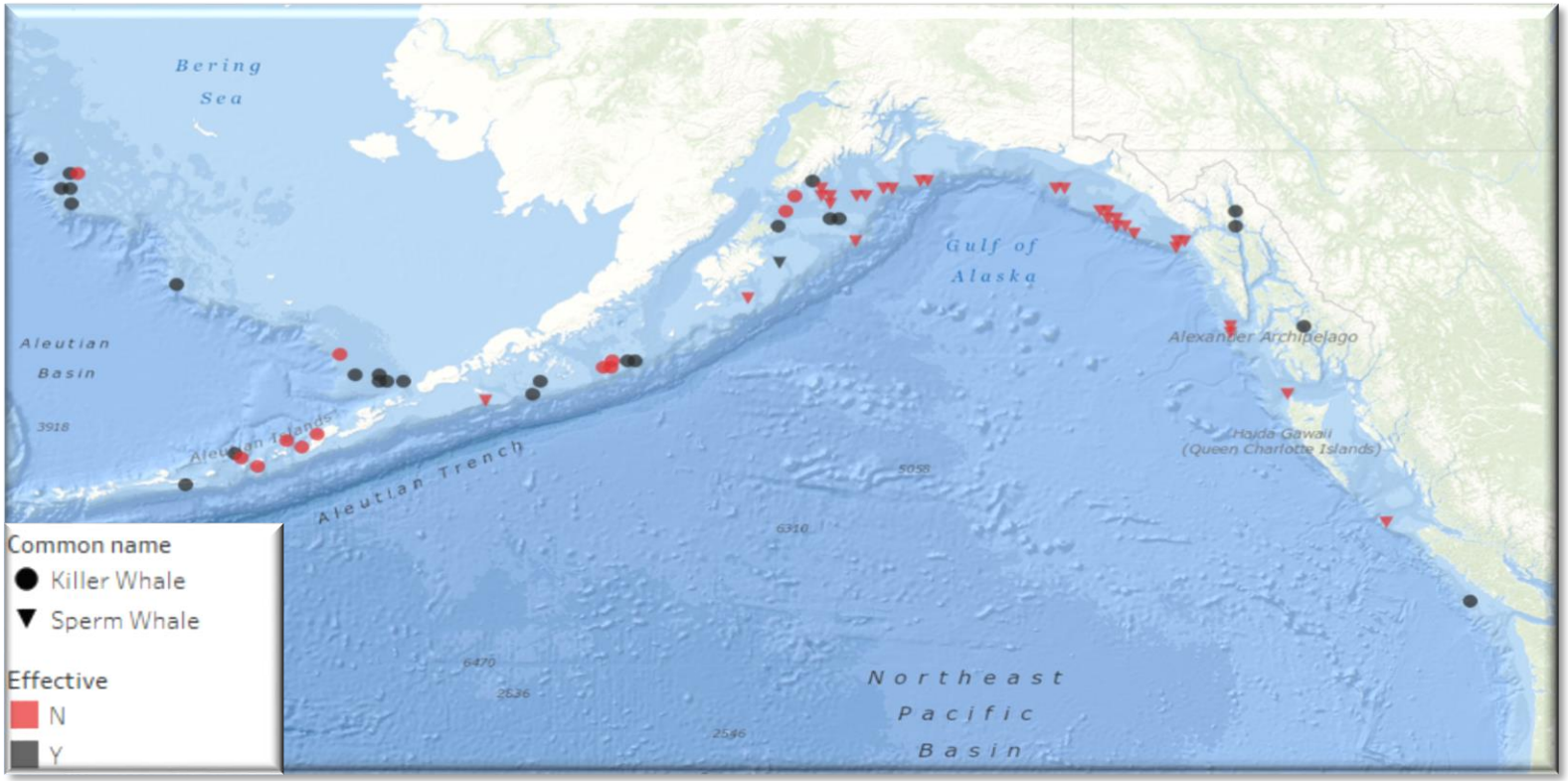
Fixed and snap gear stations
Timing is for fixed gear



Ineffective stations in 2019

Description	2A	2B	2C	3A	3B	4A	4B	4CDE	Total
Depredation: Shark				1					1
Depredation: Whale		1	2	26	4	6		1	40
Sperm Whale		1	2	23	1				27
Orca				3	3	6		1	13
Gear Issues		2		1					3
Sand Flea Activity			2	2	3				7
Soak time exceeds 24 hours				1				1	2
Moved station >3nm		1							1

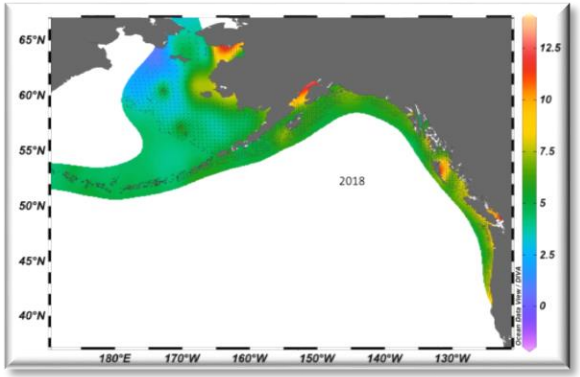
FISS stations with killer or sperm whale sightings



Secondary objectives

- Platform for data collection projects
  - Genetics, reproduction and condition factors
  - Oceanographic data
  - Prior hooking injuries
  - Marine mammal and seabird interactions
  - Environmental Contamination (ADEC)


Photo credit: Jason Taylor

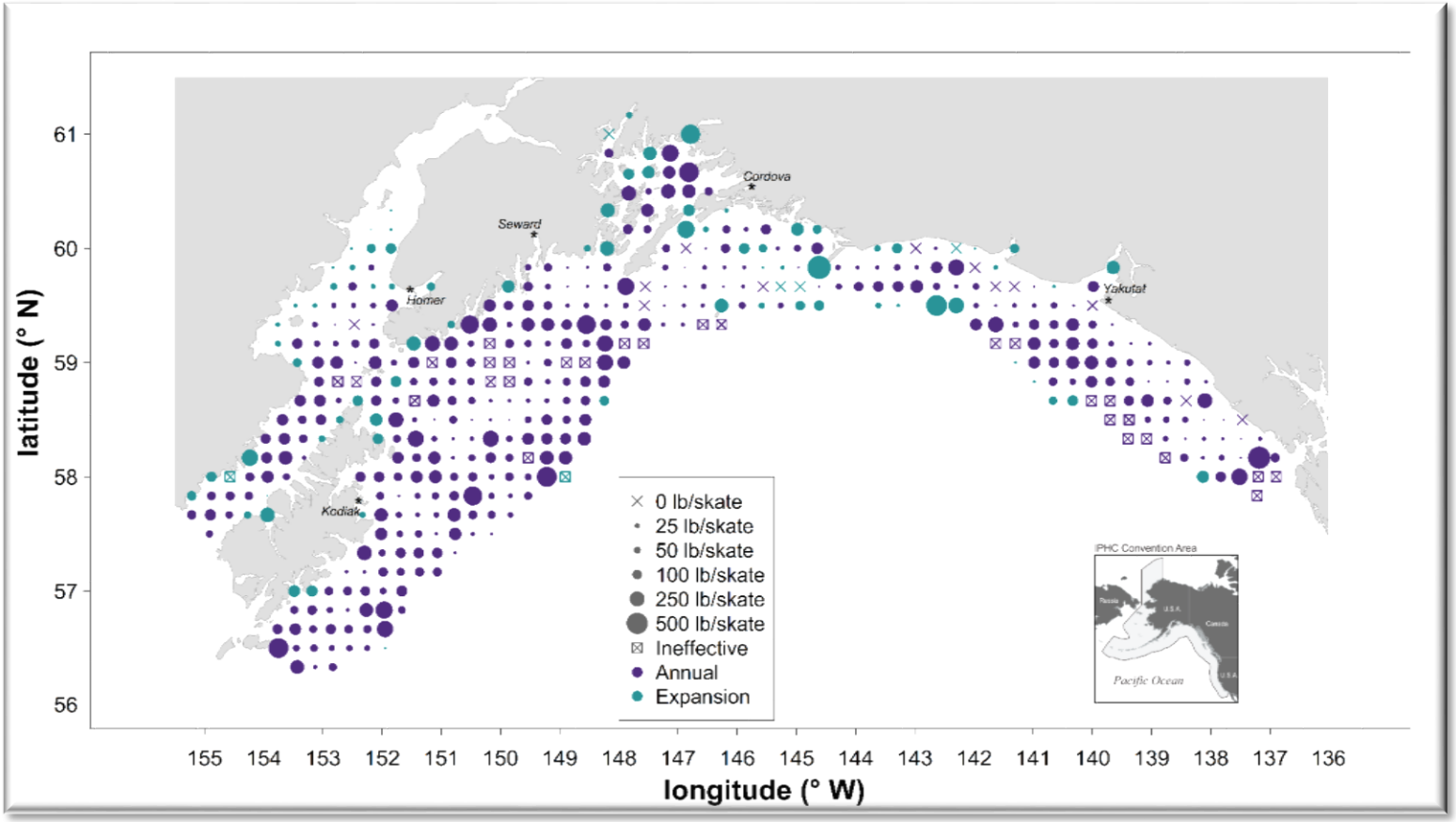


Tertiary objectives

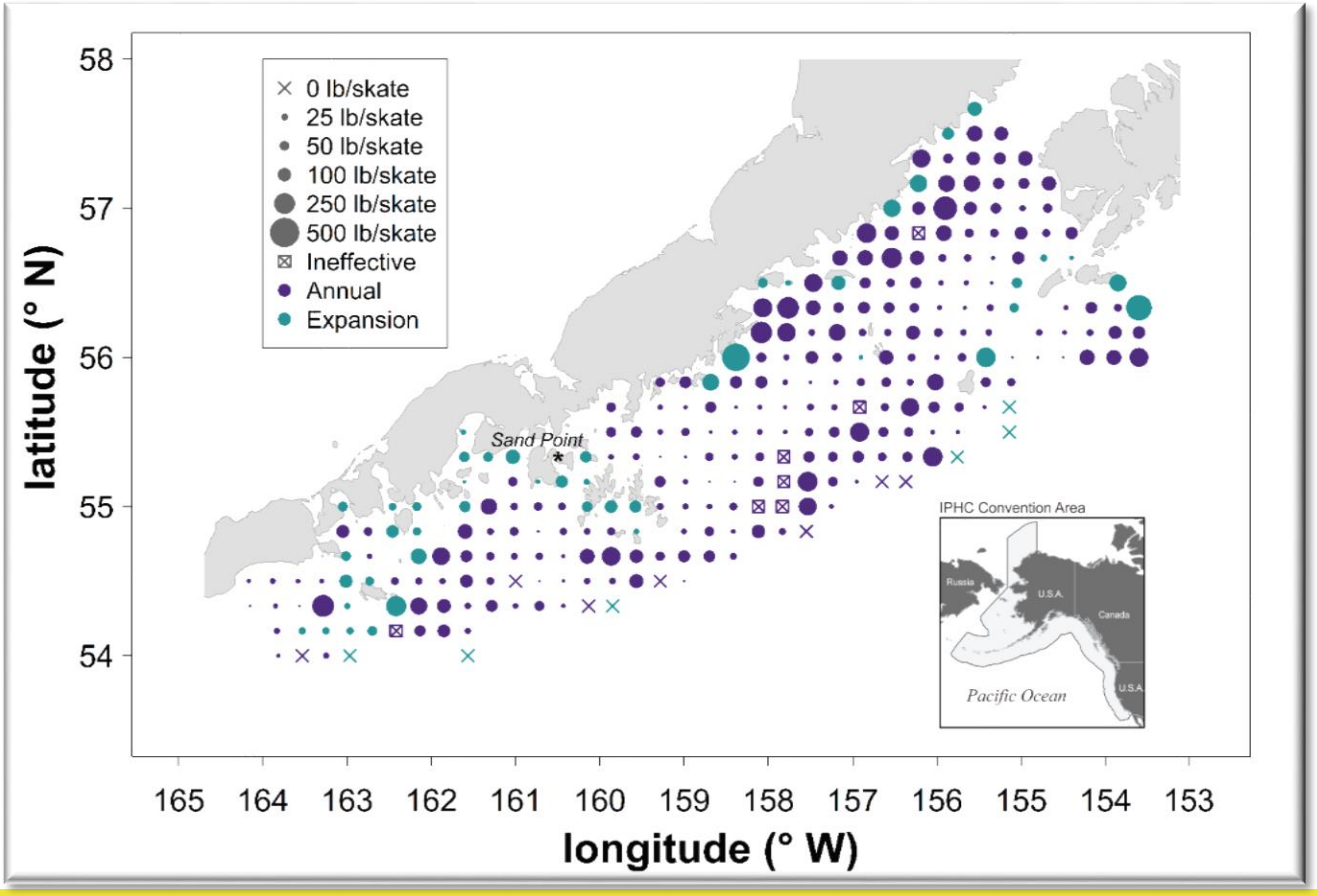
Collaboration

- **Canada**
  - Fisheries and Oceans
    - Rockfish biological samples
    - 100% hook occupancy
    - Shark sampling
- **United States of America**
  - NOAA Fisheries
    - Pacific cod sampling
    - Electronic monitoring system tests
    - Shark sampling (spiny dogfish and six gill)
    - NOAA Fisheries trawl sampling
  - WDFW and ODFW
    - Rockfish sampling cooperation

IPHC Regulatory Area 3A



IPHC Regulatory Area 3B



2019 – FISS results

- Explore the website for;
  - *FISS Catch-Per-Unit-Effort (CPUE) data maps and plots*
  - *FISS Biologicals*
  - *FISS Performance*
  - *Data set downloads*

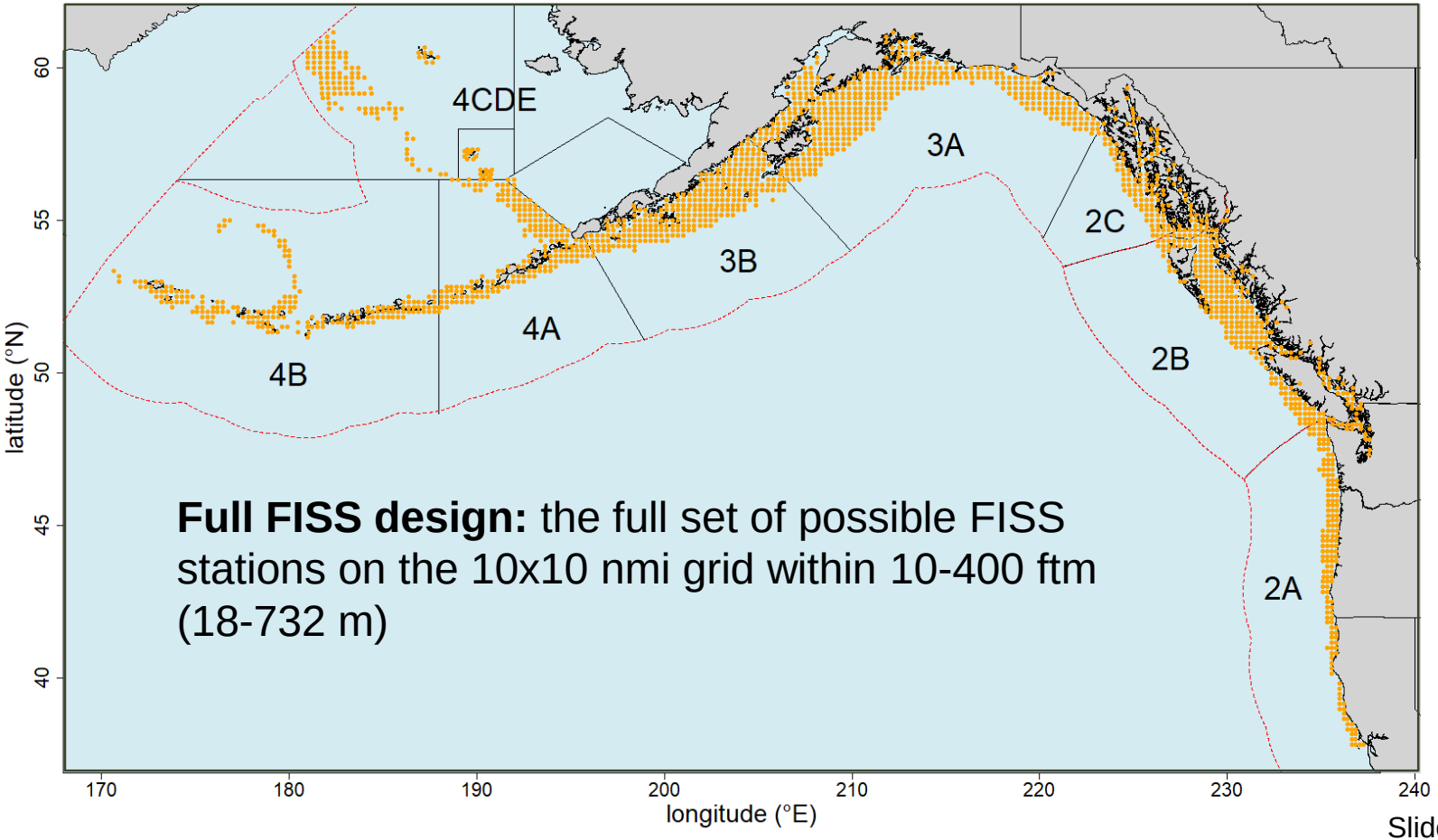
FISS expansion review

- 2019 was the 6th and final year of a program of setline survey expansions
- The FISS occupied for the first time 34% of the full grid that had previously been unsurveyed
- The result was an improved understanding of Pacific halibut density and distribution
  - Bias and uncertainty was reduced throughout the time series, not only in the year of the expansion
- Moving forward, revisiting the “new” stations from the 2014-19 expansion is unlikely to have such large effects on the entire time series

FISS priorities

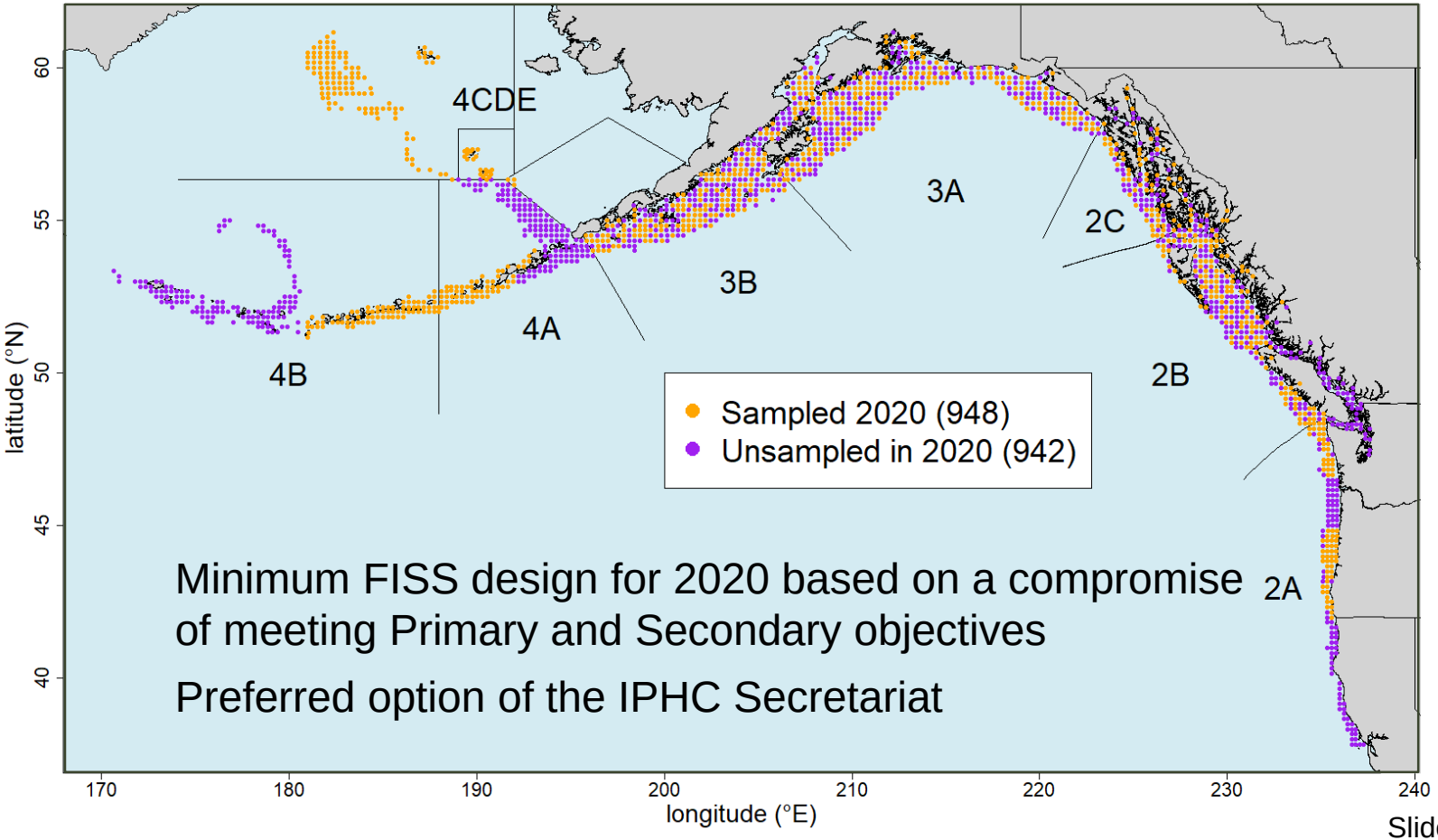
Priority	Objective	Design Layer
Primary	Sample Pacific halibut for stock assessment and stock distribution estimation	Minimum sampling requirements in terms of: • Station distribution • Station count • Skates per station
Secondary	Long term revenue neutrality	Logistics and cost: operational feasibility and cost/revenue neutrality
Tertiary	Minimize removals, and assist others where feasible on a cost-recovery basis.	Removals: minimize impact on the stock while meeting primary priority Assist: assist others to collect data on a cost-recovery basis IPHC policies: ad-hoc decisions of the Commission regarding the FISS design

Full FISS design

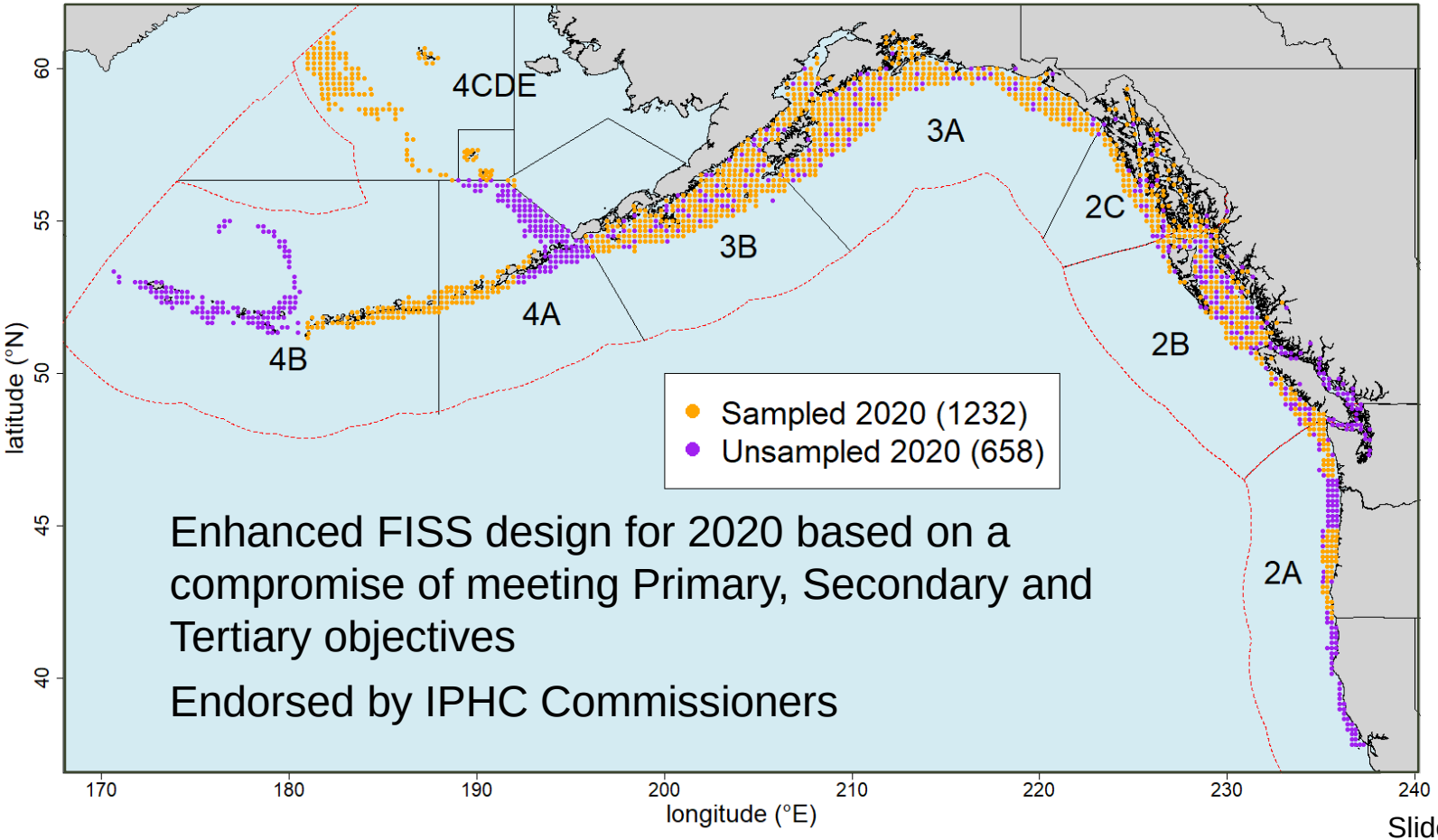


Full FISS design: the full set of possible FISS stations on the 10x10 nmi grid within 10-400 ftm (18-732 m)

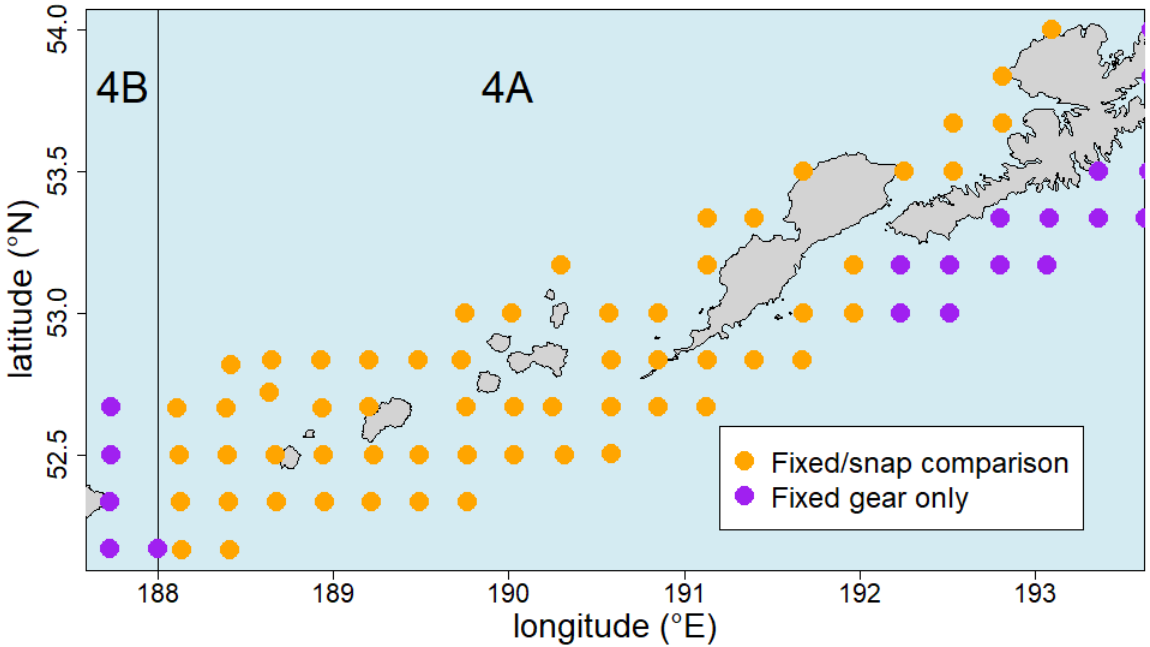
Proposed design 2020

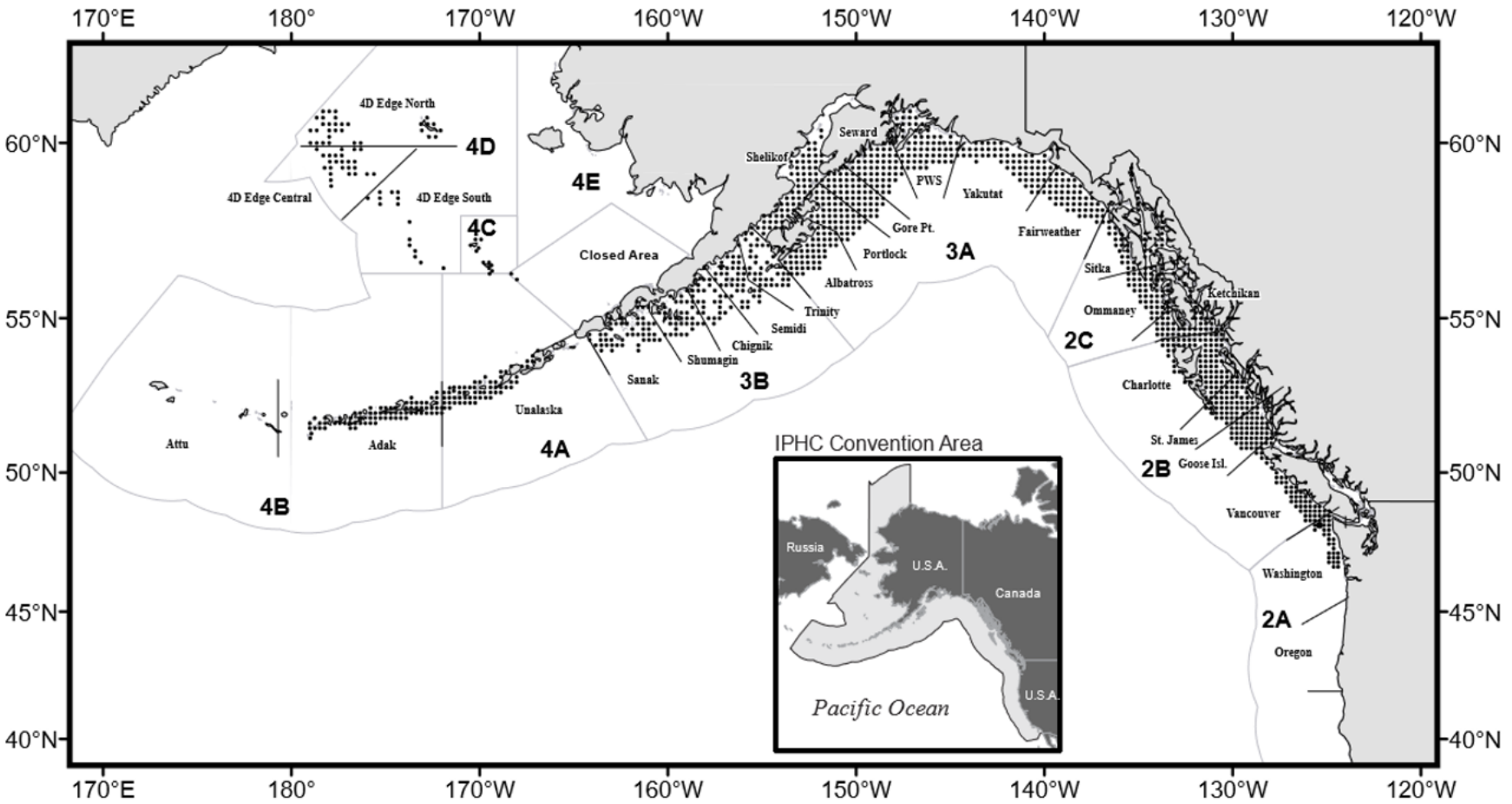


Enhanced design 2020



Fixed/snap gear comparison 2020




170°E
180°
170°W
160°W
150°W
140°W
130°W
120°W
60°N
55°N
50°N
45°N
40°N
4D Edge North
4D
4D Edge Central
4D Edge South
4C
4E
Closed Area
Seward
Shelikof
PWS
Yakutat
Gore Pt.
Portlock
Albatross
Trinity
Semidi
Chignik
Shumagin
Sanak
3A
3B
Fairweather
Sitka
Ketchikan
Ommaney
2C
Charlotte
St. James
Goose Isl.
2B
Vancouver
Washington
2A
Oregon
Unalaska
4A
Attu
Adak
4B
IPHC Convention Area
Russia
U.S.A.
Canada
U.S.A.
Pacific Ocean

IPHC Regulatory Area	Charter Region	Number of stations	Number of skates	Charter days[1]	Ports of Sale [2]
2A	Washington	29 8	4 4	17	Bellingham, Neah Bay, Westport, Newport or Astoria
2B	Vancouver	57	8	27	Vancouver, Tofino, Ucluelet or Port Hardy
2B	Goose Is.	56	8	27	Port Hardy, Prince Rupert
2B	St. James	60	8	28	Prince Rupert, Port Hardy
2B	Charlotte	84	8	39	Prince Rupert, Port Hardy
2C	Ketchikan	48	8	23	Ketchikan, other 2C ports, Prince Rupert
2C	Ommaney	52	8	25	Petersburg, other 2C ports
2C	Sitka	52	8	25	Juneau, Sitka, other 2C ports
3A	Fairweather	51	8	25	Yakutat, Sitka, Juneau, other ports in 2C
3A	Yakutat	64	8	30	Yakutat, Seward, Cordova, Valdez
3A	PWS	67	8	32	Seward, Valdez, Cordova, other 3A ports
3A	Seward	52	8	25	Seward, Valdez, Cordova, Kodiak, other 3A ports
3A	Gore Point	48	8	25	Seward, Homer, Kodiak, other 3A ports
3A	Portlock	51	8	25	Kodiak, Homer, Seward, other 3A ports
3A	Albatross	49	8	25	Kodiak, Homer, Seward, other 3A ports
3A	Shelikof	64	8	*30*	Homer, Kodiak, Alitak, other 3A ports
3B	Trinity	35	4	17	Kodiak, Alitak, Homer, other 3A ports
3B	Semidi	39	4	18	Kodiak, Alitak, Homer, other 3A ports
3B	Chignik	26	4	13	Kodiak, Alitak, Sand Point, King Cove
3B	Shumagin	34	4	17	King Cove, Kodiak, Sand Point
3B	Sanak	48	4	24	Dutch Harbor, King Cove, Akutan, Sand Pt, Kodiak
4A[3]	Unalaska	59	4	32	Dutch Harbor, King Cove, Akutan
4B	Adak	73	4	44	Adak, Dutch Harbor, Atka
4CDE Closed	4D Edge South	28	4	14	Dutch Harbor, St. Paul, Akutan, other ports in Area 4
4CDE Closed	4D Edge Central	25	4	12	Dutch Harbor, St. Paul, other ports in Area 4
4CDE Closed	4D Edge North	31	4	15	Dutch Harbor, St. Paul, other ports in Area 4

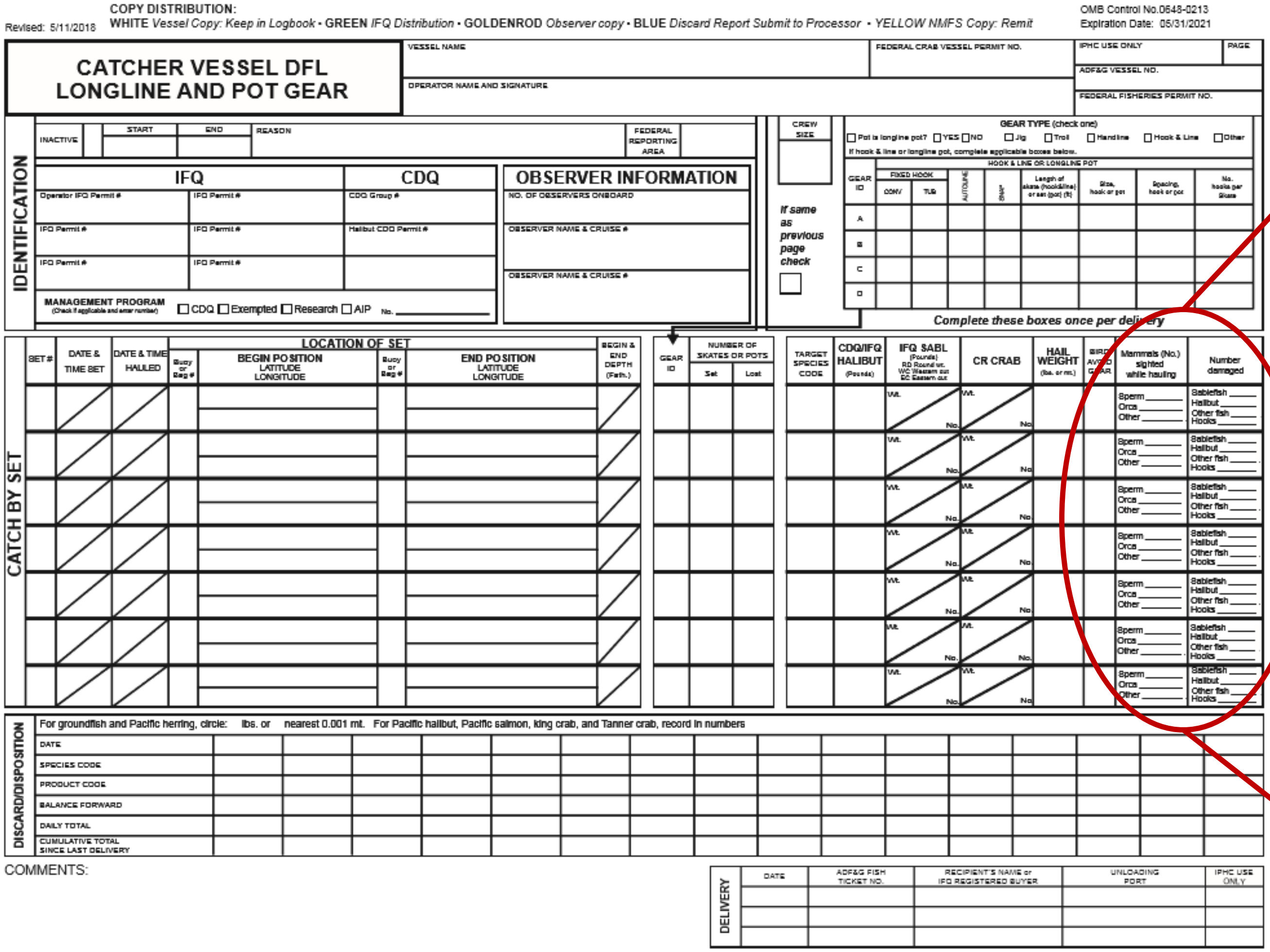
Monitoring work - whale depredation

- Fishery-Independent Setline Survey (FISS)
  - In 2018, updated whale depredation criteria
    - Sperm whales – spotted within 3 nmi of the vessel while hauling
    - Killer whales – more than 1 lips-only

- Outreach
  - Commercial and recreational fisheries
    - SeaSwap (http://seaswap.info/) and Oceanwise (https://ocean.org/)

Monitoring work - whale depredation

- Fisheries Data Logs (directed commercial)
  - Beginning in 2017, updated questions (quantifiable) on logbooks regarding marine mammal sightings and damage (fish and gear)
  - Asked during all interviews – working to have on logs in Canada



COPY DISTRIBUTION:
Revised: 5/11/2018 WHITE *Vessel Copy: Keep in Logbook* • GREEN *IFQ Distribution* • GOLDENROD *Observer copy* • BLUE *Discard Report Submit to Processor* • YELLOW *NMFS Copy: Remit*
OMB Control No.0648-0213
Expiration Date: 05/31/2021

CATCHER VESSEL DFL LONGLINE AND POT GEAR

VESSEL NAME | FEDERAL CRAB VESSEL PERMIT NO. | IPHC USE ONLY | PAGE
OPERATOR NAME AND SIGNATURE | ADF&G VESSEL NO. | FEDERAL FISHERIES PERMIT NO.

IDENTIFICATION
INACTIVE | START | END | REASON | FEDERAL REPORTING AREA
CREW SIZE
If same as previous page check

IFQ: Operator IFQ Permit # | IFQ Permit # | IFQ Permit # | IFQ Permit # | IFQ Permit # | IFQ Permit #
CDQ: CDQ Group # | Halibut CDQ Permit #
OBSERVER INFORMATION: NO. OF OBSERVERS ONBOARD | OBSERVER NAME & CRUISE # | OBSERVER NAME & CRUISE #
MANAGEMENT PROGRAM (Check if applicable and enter number) ☐ CDQ ☐ Exempted ☐ Research ☐ AIP No. ____

GEAR TYPE (check one)
☐ Pot is longline pot? ☐ YES ☐ NO ☐ Jig ☐ Troll ☐ Handline ☐ Hook & Line ☐ Other
If hook & line or longline pot, complete applicable boxes below.
HOOK & LINE OR LONGLINE POT
GEAR ID | FIXED HOOK: CONV, TUB | AUTOLINE | SNAP | Length of skate (hook&line) or set (pot) (ft) | Size, hook or pot | Spacing, hook or pot | No. hooks per Skate
A, B, C, D
Complete these boxes once per delivery

CATCH BY SET
SET # | DATE & TIME SET | DATE & TIME HAULED | LOCATION OF SET: Buoy or Bag # | BEGIN POSITION LATITUDE LONGITUDE | Buoy or Bag # | END POSITION LATITUDE LONGITUDE | BEGIN & END DEPTH (Fath.) | GEAR ID | NUMBER OF SKATES OR POTS: Set, Lost | TARGET SPECIES CODE | CDQ/IFQ HALIBUT (Pounds) | IFQ SABL (Pounds) RD Round wt. WC Western cut EC Eastern cut | CR CRAB | HAIL WEIGHT (lbs. or mt.) | BIRD AVOID GEAR | Mammals (No.) sighted while hauling | Number damaged
Wt. / No.
Sperm ___ Orca ___ Other ___ | Sablefish ___ Halibut ___ Other fish ___ Hooks ___

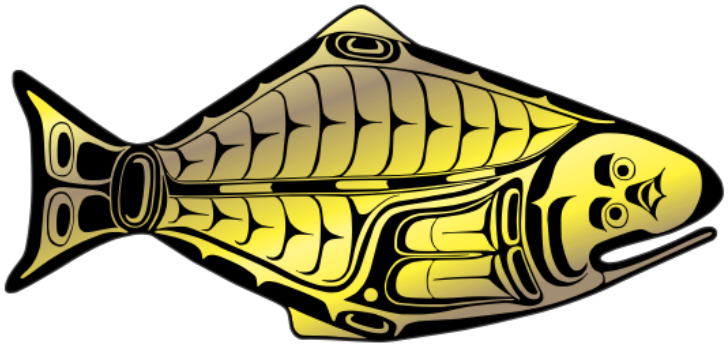
DISCARD/DISPOSITION
For groundfish and Pacific herring, circle: lbs. or nearest 0.001 mt. For Pacific halibut, Pacific salmon, king crab, and Tanner crab, record in numbers
DATE
SPECIES CODE
PRODUCT CODE
BALANCE FORWARD
DAILY TOTAL
CUMULATIVE TOTAL SINCE LAST DELIVERY

COMMENTS:

DELIVERY: DATE | ADF&G FISH TICKET NO. | RECIPIENT'S NAME or IFQ REGISTERED BUYER | UNLOADING PORT | IPHC USE ONLY

Mammals (No.) sighted while hauling	Number damaged
Sperm ____ Orca ____ Other ____	Sablefish ____ Halibut ____ Other fish ____ Hooks ____
Sperm ____ Orca ____ Other ____	Sablefish ____ Halibut ____ Other fish ____ Hooks ____
Sperm ____ Orca ____ Other ____	Sablefish ____ Halibut ____ Other fish ____ Hooks ____
Sperm ____ Orca ____ Other ____	Sablefish ____ Halibut ____ Other fish ____ Hooks ____
Sperm ____ Orca ____ Other ____	Sablefish ____ Halibut ____ Other fish ____ Hooks ____
Sperm ____ Orca ____ Other ____	Sablefish ____ Halibut ____ Other fish ____ Hooks ____
Sperm ____ Orca ____ Other ____	Sablefish ____ Halibut ____ Other fish ____ Hooks ____

INTERNATIONAL PACIFIC



HALIBUT COMMISSION

New Vessels in 2019

Borealis I (BOR)

New for 2019

Early Snap South 2C (33 stations)

New Vessels in 2019

Heather Rae (HRA)

New for 2019

Early Snap North 2C (30 stations)

New Vessels in 2019

Hanna Lio (HAN)

New for 2019

Late Snap North 2C (30 stations)

New Vessels in 2019

Southern Seas (SNS)

New for 2019

Shelikof (73 stations)

New Vessels in 2019

Cindria Gene (CDG)

New for 2019

Trinity and Yakutat (54 stations)